

High Meadow Infant School Year 1 Science Units

1.1 Our environment

This unit is taught across the whole year with a minimum of two lessons in each term. Suggested core activities are intended to be carried out each term at least once. Aim to have at least one set of observations for each season, so carry out four observations over the year as a minimum.

The unit complements Unit 1.2 The Animal Kingdom, Unit 1.4 Plants and Unit 1.5 The Weather and builds towards National Curriculum requirements to look at changes in nature across the year and provides science enrichment activities for improved engagement.

Pupils study the same natural area during the course of the year, looking at how the area as a whole changes and at how individual aspects such as a single tree change during the different seasons. They use their senses to observe the area and find common animals and plants within the area. They learn how to show respect for the area and for the living things in it.

Children working below age-related expectations will be:	<ul style="list-style-type: none">▪ Know how to respect and handle living things in their environment▪ Make some simple observations of vegetation and animal life at different times of the year
Children working at age-related expectations will:	<ul style="list-style-type: none">▪ Know how to respect and handle living things in their environment▪ Use their own observations to describe the changes that take place in vegetation and animal life across the year▪ Use everyday terms to describe simple features living things or events they observe▪ Present evidence they have collected in simple templates
Children working above age-related expectations will:	<ul style="list-style-type: none">▪ Know how to respect and handle living things in their environment▪ Observe closely and provide simple explanations for changes to living things in the seasons, e.g. fewer plants in winter because many plants need warmth▪ Present their ideas and evidence in appropriate ways▪ Use simple scientific vocabulary to describe their ideas and observations

Resources required for this unit:

Cameras. A stout stick. An umbrella

1.2 The Animal Kingdom

Pupils will become familiar with common British vertebrates and invertebrates. They will learn about the different groups of vertebrates and be able to describe the main external features of each group. They will look at what animals eat and will understand that different animals have different diets. They will describe the external human body in detail.

Children working below age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ Identify a few common British animals ▪ Know that different animals eat different things ▪ Name the basic parts of different animals
Children working at age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ identify and name a variety of common British animals that are birds, fish, amphibians, reptiles, mammals and invertebrates ▪ identify and name a variety of common animals that are carnivores, herbivores and omnivores ▪ describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, and including pets) ▪ identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense
Children working above age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ Identify and describe some common British birds, fish, amphibians, reptiles, mammals and invertebrates ▪ Name the outer parts of different animals (leg, arm, wing, fin, beak, whiskers etc.) and state some simple ways in which these external features may help them, e.g. fins for swimming ▪ Name the external parts of the human body ▪ Describe in simple terms how we sense things

Lesson	LEARNING OUTCOMES
1	Human bodies <ul style="list-style-type: none"> ▪ Name the parts of the external human body (head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth lips etc.) ▪ Describe what we use these body parts for or what they do
2	Keeping healthy <ul style="list-style-type: none"> ▪ Discuss some basic ways of staying healthy – eating well, exercising, keeping clean
3	Groups of animals <ul style="list-style-type: none"> ▪ Sort and group different kinds of animals ▪ Know the basic animal classes of birds, fish, amphibians, reptiles, mammals and invertebrates
4	More about animal classes <ul style="list-style-type: none"> ▪ Know the basic animal classes of birds, fish, amphibians, reptiles, mammals and invertebrates ▪ Name the main body parts that characterise of different animal classes
5	What do animals eat? <ul style="list-style-type: none"> ▪ Describe the diet of some of the common British animals they have been studying ▪ Compare the diet of these animals with the human diet
6	Researching an animal <ul style="list-style-type: none"> ▪ Use a number of sources to find out about a common animal ▪ Make notes in order to include relevant key facts in a report about an animal
7	Writing about an animal <ul style="list-style-type: none"> ▪ Use the research from the previous week to contribute a report to a class book or blog about animals

Resources required for this unit:

This unit does not require any special equipment but involves quite a lot of printing, including colour printing. Some printed resources, e.g. game cards, can be used from year to year.

1.3 Everyday materials

Pupils develop vocabulary to describe material properties. They carry out a range of simple tests on materials and investigate the best material to make a particular object.

Children working below age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ know about a range of basic material properties [for example, texture, appearance] ▪ make observations of materials in terms of these properties.
Children working at age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ distinguish between an object and the material from which it is made ▪ identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock ▪ describe the simple physical properties of a variety of everyday materials ▪ compare and group together a variety of everyday materials on the basis of their simple physical properties ▪ find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching
Children working above age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ Begin to link material properties with their uses through simple explanations ▪ Pupils use their knowledge and understanding of materials when they describe a variety of ways of sorting them into groups according to their properties.

Lesson	Learning objectives
1	Exploring materials <ul style="list-style-type: none"> ▪ make and record observations about materials ▪ begin to name common materials and describe their properties. ▪ distinguish between an object and the material it is made from.
2	Sorting and grouping materials <ul style="list-style-type: none"> ▪ know that materials can be used in a variety of ways ▪ group materials together and make a record of groupings ▪ know that materials can be sorted in a variety of ways according to their properties ▪ know that materials are chosen for specific purposes on the basis of their properties
3	Material and their uses <ul style="list-style-type: none"> ▪ know that there is a range of materials with different characteristics ▪ develop the vocabulary needed to describe material properties
4	More about properties <ul style="list-style-type: none"> ▪ explore materials using appropriate senses, making observations and simple comparisons ▪ know that objects made from elastic or malleable materials can be altered by squashing, bending, twisting and stretching ▪ know that transparent objects let the light through but opaque objects do not
5 & 6	Investigating materials <ul style="list-style-type: none"> ▪ carry out simple tests ▪ use their observations and ideas to suggest answers to questions ▪ gather and record data to help in answering questions. ▪ present the data in a suitable manner ▪ provide a simple conclusion that answers the question

Resources required for this unit:

Feely bags and a blindfold

A range of materials for sorting and testing – everyday objects and materials can be used

Cameras

Clean, empty yoghurt pots or similar (largish ones with a rim)

Marbles to act as small weights

Small biscuit cutters

Torches

Simple data loggers with light sensors (optional)

1.4 Plants

Pupils learn the names of some common native flowering plants and trees. They plant bulbs and/or seeds and observe their growth over a period of weeks. They go outside to study flowers and trees in wild and cultivated areas, making sketches and notes.

Children working below age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ name a few common native plants ▪ know that some plants lose their leaves in winter but others do not ▪ name the basic structures of a flowering plant ▪ make simple observations about seeds and bulbs growing
Children working at age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ identify and name a variety of common wild and garden plants, including deciduous and evergreen trees ▪ identify and describe the basic structure of a variety of common flowering plants, including trees ▪ observe the growth of bulbs and/or seeds
Children working above age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ name some common native plants including wild plants and trees ▪ describe in simple terms the function of the different parts of flowering plants and trees. ▪ chart the growth of bulbs and/or seeds

Lesson	Learning objectives
1	Plants and seeds <ul style="list-style-type: none"> ▪ know what a seed is and how to plant it ▪ know what a bulb is and how to plant it ▪ sort and group a variety of objects into seeds and non-seeds ▪ know what plants and seeds need to grow and how to take care of plants
2	Structure of flowering plants <ul style="list-style-type: none"> ▪ monitor the growth of seeds and bulbs planted last weeks ago ▪ name the basic parts of a plant: stem, leaves, roots, flower, petals, fruit, bulb and seed ▪ know that bulbs grow into new plants
3	Looking at trees <ul style="list-style-type: none"> ▪ monitor the growth of seeds and bulbs planted two weeks ago ▪ distinguish between trees and other flowering plants ▪ know the main parts of a tree: trunk, roots, branches, leaves, fruit ▪ know that some trees are evergreen and do not lose their leaves in winter but others are deciduous and do ▪ identify trees as deciduous and evergreen ▪ name some common native trees
4	Flowering plants and their seeds <ul style="list-style-type: none"> ▪ monitor the growth of seeds and bulbs planted three weeks ago ▪ know that some plants produce flowers which develop into seeds ▪ know that the fruit produced by trees contains its seeds ▪ make observations
5	Wildflowers and garden plants <ul style="list-style-type: none"> ▪ monitor the growth of seeds and bulbs planted four weeks ago ▪ compare a wild area and a garden, ▪ discuss the idea of a “weed”
6	Describing the growth of our plants <ul style="list-style-type: none"> ▪ monitor the growth of seeds and bulbs planted five weeks ago ▪ use observations notes and charts to describe the growth of seeds/bulb

Resources required for this unit:

Seeds, bulbs and plant pots. Glass containers for growing bulbs. Compost. Small flowering plants in pots. Digital microscope with time lapse facility. Cameras. Digital scales. Blindfold. Magnifying glasses. Clip boards. Electric propagator

1.5 The Weather

Children working below age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ know that the weather is different in each season ▪ make simple observations of the weather
Children working at age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ observe changes across the four seasons ▪ observe and describe weather associated with the seasons and how day length varies
Children working above age-related expectations will be able to:	<ul style="list-style-type: none"> ▪ interpret simple data to describe changes in the weather

Lesson	Learning Objectives
1	Weather stations <ul style="list-style-type: none"> ▪ Make and use simple instruments for observing the weather, setting up a simple weather station ▪ Describe the changes in the weather with the seasons ▪ Provide a fictional weather forecast for a month of the year
2	Sunny days <ul style="list-style-type: none"> ▪ Take measurements from the weather station and observe the weather outside ▪ Learn how to stay safe in the sun. ▪ Learn about the effects of the Sun in the UK and around the world
3	Rainy days <ul style="list-style-type: none"> ▪ Take measurements from the weather station and observe the weather outside ▪ Know that rain comes from clouds ▪ Know that not all clouds produce rain and that there are different kinds of clouds ▪ Make a rainbow
4	Stormy days <ul style="list-style-type: none"> ▪ Take measurements from the weather station and observe the weather outside ▪ Look at different types of storm around the World – hurricanes, tornados, monsoons ▪ Know that some storms in the UK are accompanied by thunder and lightning
5	Snowy days <ul style="list-style-type: none"> ▪ Take measurements from the weather station and observe the weather outside ▪ Know that snow comes from clouds ▪ Know that some parts of the world and some seasons are more likely to have snow

Resources required for this unit:

General craft supplies. Anemometer (either bought or made – there are a number of versions on the Internet).
 Thermometers
 Data loggers – light and temperature sensors (optional)
 Globe
 Torches and small mirrors. Large glass jars.
 Tornado tube